(Practitioner's Docket No. GP-303626)

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below.

1. (Currently Amended) An apparatus for plastically deforming a work piece ~~in the form of~~comprising a sheet, the apparatus comprising:

a first and a second~~t least two~~ cylindrical guide rolls rotatable in a first direction, each of said cylindrical guide rolls having an outer circumference;

a bendable strip having a portion of at least one surface in communication with a portion of the outer circumference of each of the first and second ~~at least two~~ cylindrical guide rollers, said bendable strip being capable of motion around the ~~at least two~~first and second cylindrical guide rollers in the first direction and exerting a force upon ~~a~~the work piece,

a first cylindrical feeding roll rotatable in a second direction opposite to the first direction, said first cylindrical feeding roll having an outer circumference,

a plastic deformation passage having a first surface and a second surface, at least a portion of the first surface being defined by a portion of the bendable strip, and at least a portion of the second surface being defined by the outer circumference of the first cylindrical feeding roll, the plastic deformation passage extending from the first cylindrical guide roll to the second cylindrical guide roll.

wherein one or both of the bendable strip and the cylindrical feeding roll, when in motion, propel the work piece through the plastic deformation passage wherein ~~it~~the work piece is plastically deformed.

2. (Withdrawn) The apparatus of claim 1 wherein the bendable strip has a tension force to facilitate the motion of the bendable strip with the at least two guide rolls in the first direction.

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3. (Withdrawn) The apparatus of claim 1 wherein the portion of the bendable strip that defines a portion of the first surface of the plastic deformation passage is positioned between the at least two cylindrical guide rolls.

4. (Withdrawn) The apparatus of claim 3 wherein the portion of the bendable strip that defines a portion of the first surface of the plastic deformation passage is adjacent to a portion of the bendable strip in communication with the outer circumference of at least one cylindrical guide roll.

5. (Currently Amended) The apparatus of claim 1 ~~further comprising a plastic deformation passage~~ wherein another portion of the first surface of the plastic deformation passage is defined by a die.

6. (Currently Amended) The apparatus of claim 1 wherein the apparatus ~~die~~ compresses ~~a~~ the ~~deformable~~ work piece between ~~itself~~the die and the first cylindrical feeding roll.

7. (Currently Amended) The apparatus of claim 1 wherein the plastic deformation passage further comprises a channel defined by an upper and lower die, said upper die being in communication with a portion of the bendable strip and said lower die being in communication with the outer circumference of the first cylindrical feeding roll.

8. (Original) The apparatus of claim 7 wherein a single one-piece die comprises the upper and lower die.

9. (Original) The apparatus of claim 7 wherein the upper die is in communication with a portion of the bendable strip that is in communication with one of the cylindrical guide rolls.

10. (Original) The apparatus of claim 7 wherein the channel is an angled channel.

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11. (Withdrawn) The apparatus of claim 1 wherein the plastic deformation channel further comprises a heating element for supplying heat to the work piece.

12. (Withdrawn) The apparatus of claim 1 wherein the work piece has a thickness and a portion of the plastic deformation passage has a height that is no more than the thickness of the work piece.

13. (Withdrawn) The apparatus of claim 12 wherein a portion of the plastic deformation passage has a height that is less than the thickness of the work piece.

14. (Withdrawn) The apparatus of claim 12 wherein the plastic deformation passage has an initial height and a final height and said final height is less than said initial height and said initial height is no more than the thickness of the work piece.

15. (Withdrawn) The apparatus of claim 1 wherein the work piece is a sheet having a width and a thickness, said width being at least five times said thickness.

16. (Withdrawn) The apparatus of claim 15 wherein the work piece is a sheet of aluminum.

17. (Withdrawn) The apparatus of claim 1 further comprising a plurality of first structures on the outer circumference of the cylindrical guide rolls.

18. (Withdrawn) The apparatus of claim 17 wherein the first structures comprise at least one structure selected from teeth, barreling, surface pattern roughness, chain links and mixtures thereof.

19. (Withdrawn) The apparatus of claim 1 further comprising a plurality of second structures on at least a portion of at least one surface of the bendable strip.

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20. (Withdrawn) The apparatus of claim 19 wherein the second structure comprises at least one structure selected from teeth, barreling, surface pattern roughness, chain links and mixtures thereof.

21. (Withdrawn) The apparatus of claim 1 further comprising

a plurality of first structures on the outer circumference of the cylindrical guide rolls and

a plurality of second structures on the bendable strip, said second structures being adapted to engage with the first structures when the cylindrical guide rolls and bendable strip are under motion.

22. (Withdrawn) The apparatus of claim 21 wherein the first and second structures are teeth adapted to engage each other.

23. (Withdrawn) The apparatus of claim 1 wherein the outer circumference of the cylindrical feed roller further comprises at least one structure selected from teeth, barreling, surface pattern roughness, chain links and mixtures thereof.

24. (Withdrawn) The apparatus of claim 1 wherein the bendable strip is a continuous loop.

25. (Withdrawn) The apparatus of claim 1 wherein the bendable strip comprises a beginning and an end.

26. (Withdrawn) The apparatus of claim 1 wherein the bendable strip further comprises an inner surface and an outer surface, at least a portion of the inner surface being in communication with the outer circumference of the cylindrical guide rolls and at least a portion of the outer surface being in communication with the work piece.

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27. (Withdrawn) The apparatus of claim 1 further comprising at least one shoe guide comprising at least one sliding surface, said shoe guide being in communication with a portion of the bendable strip.

28. (Withdrawn) The apparatus of claim 27 wherein the sliding surface is in communication with the portion of the bendable strip.

29. (Withdrawn) The apparatus of claim 28 wherein the shoe guide comprises one or more channels to supply lubrication to lubricate the sliding surface in communication with the bendable strip.

30. (Withdrawn) The apparatus of claim 27 where the at least one shoe guide is located between the at least two cylindrical rollers.

31. (Withdrawn) The apparatus of claim 1 further comprising one or more back up rollers in communication with the outer circumference of the at least one feeding roller.

32. (Withdrawn) The apparatus of claim 1 further comprising one or more back up rollers in communication with the bendable strip.

33. (Withdrawn) A method of plastically deforming a work piece, comprising providing an apparatus comprising,

at least two cylindrical guide rolls rotatable in a first direction, each of said cylindrical guide rolls having an outer circumference;

a bendable strip having at least one surface in communication with a portion of the outer circumference of each of the at least two guide rollers, said bendable strip being capable of movement with the at least two guide rollers in the first direction and exerting a force upon a work piece,

a cylindrical feeding roll rotatable in a second direction opposite to the first direction, said cylindrical feeding roll having an outer circumference,

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a plastic deformation passage having an first surface and a second surface, at least a portion of the first surface being defined by the bendable strip, and at least a portion of the second surface being defined by the outer circumference of the first cylindrical feeding roll,

rotating the at least two cylindrically guide rolls in a first direction and the cylindrical feeding roll in a second direction,

propelling a work piece into the plastic deformation passage by the motion of one or both of the bendable strip or the feeding roll,

plastically deforming the work piece in the plastic deformation passage, and

removing a plastically deformed work piece from the plastic deformation passage.

34. (Withdrawn) The method of claim 46 further comprising reintroducing the resulting plastically deformed work piece back into the provided apparatus.

35. (Withdrawn) An apparatus for plastic deforming a metallic sheet, comprising

at least two cylindrical guide rolls rotatable in a first direction, each of said cylindrical guide rolls having an outer circumference;

a bendable strip having at least one surface in communication with a portion of the outer circumference of each of the at least two guide rollers, said bendable strip having a tension force to facilitate movement of the bendable strip with the at least two guide rollers in the first direction,

a first cylindrical feeding roll rotatable in a second direction opposite to the first direction, said first cylindrical feeding roll having an outer circumference,

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a plastic deformation passage having a first surface, a second surface, and a channel, at least a portion of said first surface being defined by the bendable strip, and at least a portion of said second surface being defined by the outer circumference of the first cylindrical feeding roll, said channel being defined by an upper and lower die, said upper die being in communication with a portion of the bendable strip positioned between the at least two cylindrical guide rolls and said lower die being in communication with the outer circumference of the feeding roll,

wherein the bendable strip exerts a force on a metallic sheet and one or both of the bendable strip or the cylindrical feeding roll when under motion propel the metallic sheet into the plastic deformation passage.

36. (Withdrawn) A plastically deformed metallic sheet deformed by the apparatus of claim 1.

37. (Withdrawn) The plastically deformed metallic sheet of claim 52 having a width and a thickness, said width being at least five times said thickness.

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